

AMENDMENT(S) TO THE CLAIMS

1. (Currently Amended) An optical interconnect for a fiber optic system,
2 comprising:

an optoelectronic device selected from the group consisting of a top emitting vertical
4 cavity surface emitting laser (VCSEL) and a bottom emitting VCSEL ; and

a penetrator made of a suitable optically transmissive material ~~optically coupled to~~ etched
6 into a substrate of the optoelectronic device and configured for insertion along the length of an
optical fiber for transferring light between the optical fiber and the optoelectronic device.

2. (Original) The interconnect of Claim 1 wherein the penetrator has a pyramidal
2 shape.

3. (Original) The interconnect of Claim 1 wherein the penetrator has a conical
2 shape.

4-5 (Canceled)

6. (Original) The interconnect of Claim 1 wherein the penetrator has at least one
2 wall coated with a material that minimizes reflection of light back into the optoelectronic device.

7. (Original) The interconnect of Claim 1 wherein the penetrator has at least one
2 wall coated with a material that facilitates coupling of light from the optoelectronic device to the
optical fiber.

8. (Original) The interconnect of Claim 1 and further comprising an optical fiber
2 having the penetrator pierced therein to optically couple the optoelectronic device and the
optical fiber.

9. (Previously Amended) The interconnect of Claim 8 and further comprising an
2 encapsulation layer at least partially surrounding the optoelectronic device and the penetrator.

10. (Original) The interconnect of Claim 1 and further comprising a plastic optical
2 fiber, and wherein the penetrator is inserted along the length of the plastic optical fiber at least
halfway across a diameter of the optical fiber.

11. (Currently Amended) A ~~An~~ parallel optical interconnect for a fiber optic system,
2 comprising:

a plurality of optoelectronic devices arranged in a linear array selected from the group
4 consisting of a top emitting vertical cavity surface emitting laser (VCSEL) and a bottom emitting
VCSEL ; and

6 a plurality of penetrators each made of a suitable optically transmissive material and
~~optically coupled to~~ etched into a substrate of a corresponding one of the optoelectronic devices
8 and configured for insertion along the length of a corresponding plastic optical fiber of a side-by-
side array of a plurality of plastic optical fibers for transferring light between the optical fibers
10 and the corresponding optoelectronic devices.

12. (Original) The interconnect of Claim 11 wherein each penetrator has a pyramidal
2 shape.

13. (Original) The interconnect of Claim 11 wherein each penetrator has a conical
2 shape.

14-15 (Canceled)

16. (Original) The interconnect of Claim 11 wherein each penetrator has at least one
2 wall coated with a material that minimizes reflection of light back into the corresponding
optoelectronic device.

17. (Original) The interconnect of Claim 11 wherein each penetrator has at least one
2 wall coated with a material that facilitates coupling of light from the optoelectronic device to the
corresponding optical fiber.

18. (Original) The interconnect of Claim 11 and further comprising a plurality of
2 optical fibers each having a corresponding one of the penetrators pierced therein to optically
couple each optoelectronic device to its corresponding optical fiber.

19. (Previously Amended) The interconnect of Claim 18 and further comprising an
2 encapsulation layer at least partially surrounding the optoelectronic devices and the penetrators.

20. (Original) The interconnect of Claim 11 wherein the optoelectronic devices are
2 attached to a support selected from the group consisting of a common ceramic substrate, a
common silicon substrate and a common integrated circuit.

21. (Canceled)

22. (Allowed) An optical interconnect for a fiber optic system, comprising:
2 an optoelectronic device; and
a penetrator made of a suitable optically transmissive material etched into a substrate of
4 the optoelectronic device, the penetrator being optically coupled to the optoelectronic device and
configured for insertion along the length of an optical fiber for transferring light between the
6 optical fiber and the optoelectronic device.

23. (Allowed) An parallel optical interconnect for a fiber optic system, comprising:
2 a plurality of optoelectronic devices arranged in a linear array; and
a plurality of penetrators each made of a suitable optically transmissive material and
4 etched into a substrate of a corresponding one of the optoelectronic devices, the penetrators
being optically coupled to the corresponding optoelectronic devices and configured for insertion
6 along the length of a corresponding plastic optical fiber of a side-by-side array of a plurality of
plastic optical fibers for transferring light between the optical fibers and the corresponding
8 optoelectronic devices.